

 <p>FORM PTO-1449</p> <p>U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(Use several sheets if necessary)</p>	ATTY. DOCKET NO. I-1-0065.10US	SERIAL NO. 10/663,240
	APPLICANT Bolgiano et al.	
	FILING DATE September 16, 2003	GROUP 2475

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		3,714,573	01/1973	Grossman			
		4,081,748	03/1978	Batz			
		4,099,121	07/1978	Fang			
		4,128,809	12/1978	Kage			
		4,426,712	01/1984	Gorski-Popiel			
		4,530,087	07/1985	Yamamoto			
		4,599,734	07/1986	Yamamoto			
		4,644,351	02/1987	Zabarsky			
		4,675,863	06/1987	Paneth et al.			
		4,727,590	02/1988	Kawano et al.			
		4,780,885	10/1988	Paul et al.			
		4,799,252	01/1989	Eizenhoffer et al.			
		4,901,307	02/1990	Gilhousen et al.			
		5,031,193	07/1991	Atkinson et al.			
		5,043,736	08/1991	Darnell et al.			
		5,046,066	09/1991	Messenger			
		5,056,106	10/1991	Wang et al.			
		5,058,200	10/1991	Huang et al.			
		5,068,916	11/1991	Harrison et al.			
		5,081,641	01/1992	Kotzin et al.			
		5,081,643	01/1992	Schilling			
		5,088,108	02/1992	Uddenfeldt et al.			
		5,097,484	03/1992	Akaiwa			
		5,101,501	03/1992	Gilhousen et al.			
		5,103,459	04/1992	Gilhousen et al.			
EXAMINER				DATE CONSIDERED			

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	5,109,390	04/1992	Gilhousen et al.			
	5,124,915	06/1992	Krenzel			
	5,128,925	07/1992	Dornstetter et al.			
	5,155,689	10/1992	Wortham			
	5,164,942	11/1992	Kamerman et al.			
	5,166,951	11/1992	Schilling			
	5,177,765	1/5/1993	Holland et al.			
	5,193,101	09/1993	McDonald et al.			
	5,203,018	04/1993	Hirose			
	5,208,756	05/1993	Song			
	5,214,789	05/1993	George			
	5,218,367	06/1993	Sheffer et al.			
	5,218,618	06/1993	Sagey			
	5,223,844	06/1993	Mansell et al.			
	5,227,802	07/1993	Pullman			
	5,235,633	08/1993	Nass et al.			
	5,247,356	09/1993	Ciampa			
	5,260,943	11/1993	Comroe et al.			
	5,260,967	11/1993	Schilling			
	5,280,472	01/1994	Gilhousen et al.			
	5,283,767	02/1994	McCoy			
	5,289,499	02/1994	Weerackody			
	5,289,527	02/1994	Tiedemann, Jr.			
	5,293,645	03/1994	Sood et al. ¹			
	5,297,162	03/1994	Lee et al.			
	5,305,353	04/1994	Weerackody			

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		5,321,696	04/1994	Buchholz et al.			
		5,323,384	06/1994	Norwood			
		5,329,530	07/1994	Kojima			
		5,345,467	09/1994	Lomp et al.			
		5,347,535	09/1994	Karasawa et al.			
		5,365,516	11/1994	Jandrell ¹¹			
		5,367,539	11/1994	Copley			
		5,371,734	12/1994	Fischer			
		5,371,780	12/1994	Amitay			
		5,373,502	12/1994	Turban			
		5,390,166	02/1995	Rohani et al.			
		5,420,883	05/1995	Swensen et al.			
		5,430,769	07/1995	Patsiokas et al.			
		5,442,625	08/1995	Gitlin et al.			
		5,479,448	12/1995	Seshadri			
		5,481,533	1/1996	Honig et al.			
		5,483,244	01/1996	Grube et al.			
		5,483,668	01/1996	Malkamaki et al.			
		5,506,863	4/9/1996	Meidan et al.			
		5,513,176	04/1996	Dean et al.			
		5,533,011	07/1996	Dean et al.			
		5,533,013	07/1996	Leppanen			
		5,553,076	9/3/1996	Behtash et al.			
		5,584,057	12/1996	Dent			
		5,594,737	01/1997	Pillekamp et al. ⁷			
		5,614,914	03/1997	Bolgiano et al.			

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		5,625,876	04/1997	Gilhausen et al.			
		5,663,990	09/1997	Bolgiano et al.			
		5,684,793	11/1997	Kiema et al.			
		5,712,868	01/1998	Stern et al. ¹²			
		5,748,669	05/1998	Yada			
		5,761,196	6/2/1998	Ayerst et al.			
		5,781,541	07/1998	Schnieder			
		5,859,879	01/1999	Bolgiano et al.			
		5,881,094	03/1999	Schilling			
		5,912,644	06/1999	Wang			
		6,175,308	01/2001	Tallman et al.			
		6,747,969	06/2007	Hirsch			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
		0528090	02/1993	EP				
		2237706	05/1991	GB				
		2259430	03/1993	GB				
		05-276210	10/1993	JP			X**	
		06-244814	09/1994	JP			X**	
		1-233930	09/1989	JP			X**	
		63-237636	10/1998	JP			X**	
		H01-314443	12/1989	JP			X**	
		H02-3007	01/1990	JP			X	
		H02-302133	06/1992	JP			X	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
		H03-177669	08/1991	JP			X	
		H03-235077	10/1991	JP				
		H05-244051	09/1993	JP			X**	
		H06-097914	04/1994	JP			X**	
		S53-109328	08/1978	JP			X	
		S63-065723	09/1989	JP			X	
		S63-274236	11/1988	JP			X**	
		S63-286027	11/1988	JP			X	
		S63-286072	11/1988	JP			X**	
		H05-211470	08/1993	JP ²			X**	
		H04-502844	08/1993	JP ³			X	
		H06-501349	01/1992	JP ⁵			X	
	*	H03-094851	09/1991	JP				X
	*	05-102943	04/1993	JP			X**	
	*	05-227124	09/1993	JP			X**	
		199107036	05/1991	WO ⁴				
		199200639	01/1992	WO ⁶				
		199210890	06/1992	WO				
		199306669	04/1993	WO				
		199608908	03/1996	WO ⁸				
		199833346	07/1998	WO ⁹				
		199939455	08/1999	WO ¹⁰				

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OTHER DOCUMENTS		
EXAMINER INITIAL		DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.)
		"Mobile Station-Base Station Compatibility Standard for Dual-Mode Wideband Spread Spectrum Cellular System", TIA/EIA/IS-95-A, TIA Interim Standard, (May 1995).
		"Ultraphone, System Description GP110," InterDigital Communications Corporation, pgs. 1-17, (October 1993).
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		AZAD ET AL., "Multirate Spread Spectrum Direct Sequence CDMA Techniques", The Institution of Electrical Engineers, pp. 4/1-4/5 (1994).
		BARAN, "On Distributed Communications Networks," IEEE Transactions on Communication Systems, Volume 12 (March 1964).
		BARAN, "On Distributed Communications Networks," RAND Corporation Paper, P-2626 (September 1962).
		BLANZ ET AL., "Performance of a Cellular Hybrid C/TDMA Mobile Radio System Applying Detection and Coherent Receiver Antenna Diversity, IEEE, pgs. 568-579, (May 1994).
		ERCEG ET AL., "Urban/Suburban Out-of-Sight Propagation Modeling," IEEE Communications Magazine, pgs. 56-61, (June 1992).
		ESMAILZADEH ET AL., "Direct Sequence Spread Spectrum Communication in Selection Diversity Channels by Time Division Duplex Technique," IEEE, pgs. 345-348, (1992).
		ESMAILZADEH ET AL., "Quasi-Synchronous Time Division Duplex CDMA", IEEE, pgs. 1637-1641, (1994).
		ESMAILZADEH ET AL., "Time Division Duplex Transmission of Direct Sequence Spread Spectrum Signals in Multipath Channels", IEEE, pgs. 1572-1576, (1994).

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EXAMINER INITIAL		DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.)
		GERLACH ET AL., "Base Station Transmitter Antenna Arrays With Mobile to Base Feedback", IEEE 1993 Conference Record of the Twenty-Seventh Asilomar Conference on Signals, Systems, and Computers, Vol. 2, pgs. 1432-1436, (November 1993).
		GHASSMZADEH ET AL., "Indoor Propagation and Fading Characterization of Spread Spectrum Signal at 2 GHz," IEEE, pgs. 56-60, (1992).
		JAKES, JR., "Microwave Mobile Communications," Bell Telephone Laboratories, North Andover, MA, pgs. 309-323 and 535-541, (1974).
		KAUFMANN ET AL., "Digital Spread-Spectrum Multipath-Diversity Receiver for Indoor Communications," IEEE, pgs. 1038-1041, (1992).
		KAVEHRAD ET AL., "Direct-Sequence Spread Spectrum with DPSK Modulation and Diversity for Indoor Wireless Communications," IEEE, pgs. 224-236, (1987).
		KUBOTA ET AL., "A Time Diversity CDMA Scheme Employing Orthogonal Modulation for Time Varying Channels," IEEE 43 rd Vehicular Technology Conference, pp. 444-447 (May 20, 1993).
	*	LOPES, "Combined Space/Time Diversity Technique for Narrowband TDMA Mobile Radio Systems," IEEE Electronics Letters, Vol. 25, pp. 1001-1002 (May 1989).
		MATSUMOTO ET AL., "Performance of RS-Coded M-ary FSK for Frequency-Hopping Spread Spectrum Mobile Radios," Proceedings of the 1991 IEICE Fall Conference, B-244, The Institute of Electronics, Information, and Communication Engineers (August 5, 1991). †
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EXAMINER INITIAL		DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.)
		SCHILLING ET AL., "Spread Spectrum for Commercial Communications," IEEE Communications Magazine, Vol. 29, Issue 4, pgs. 66-79, (April 1991).
		SESHADRI ET AL., "Two Signaling Schemes For Improving The Error Performance Of Frequency-Division-Duplex (FDD) Transmission Systems Using Transmitter Antenna Diversity," Secaucus, NJ, New York, IEEE, US, pgs 508-511, (May 18, 1993).
		SESHADRI ET AL., "Advanced Techniques For Modulation, Error Correction, Channel Equalization, And Diversity," AT&T Technical Journal, US, American Telephone and Telegraph Co., New York, Vol. 72, No. 4, pgs. 48-63, (July 1, 1993).
		TIA/EIA Interim Standard; Mobile Station-Base Station Compatibility Standard for Dual-Mode Wideband Spread Spectrum Cellular System; TIA/EIA/IS-95, (July 1993).
		WHANG ET AL., Performance Evaluation of a Direct-Sequence Spread-Spectrum Multiple-Access with Microscopic and Macroscopic Diversity in Mobile Radio Environment, IEEE, pgs. 803-806, (1993).
		WINTERS, "The Diversity Gain Of Transmit Diversity In Wireless Systems With Rayleigh Fading," New Orleans, New York, IEEE, US, pgs. 1121-1125, (May 1, 1994).
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	*	YAMAMOTO ET AL., "TDMA Communication," The Institute of Electronics, Information and Communication Engineers, pp. 8-9 (April 5, 1991).

¹ Corresponds to JP H05-211470; ² Corresponds to US 5,293,645; ³ Corresponds to WO 199107036; ⁴ Corresponds to JP H04-502844; ⁵ Corresponds to WO 199200639; ⁶ Corresponds to H06-501349; ⁷ Corresponds to WO 94/10812; ⁸ Corresponds to JP 10-509287; ⁹ Corresponds to JP 2000-507431; ¹⁰ Corresponds to JP 2002-502182; ¹¹ Corresponds to JP 7-502153 and WO 93/04453; ¹² Corresponds to JP 6-510656 and WO 94/01956.

X** Abstract only

† English abstract not available. A copy of the document in Japanese has been provided, in addition to the search report in which it was cited.

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